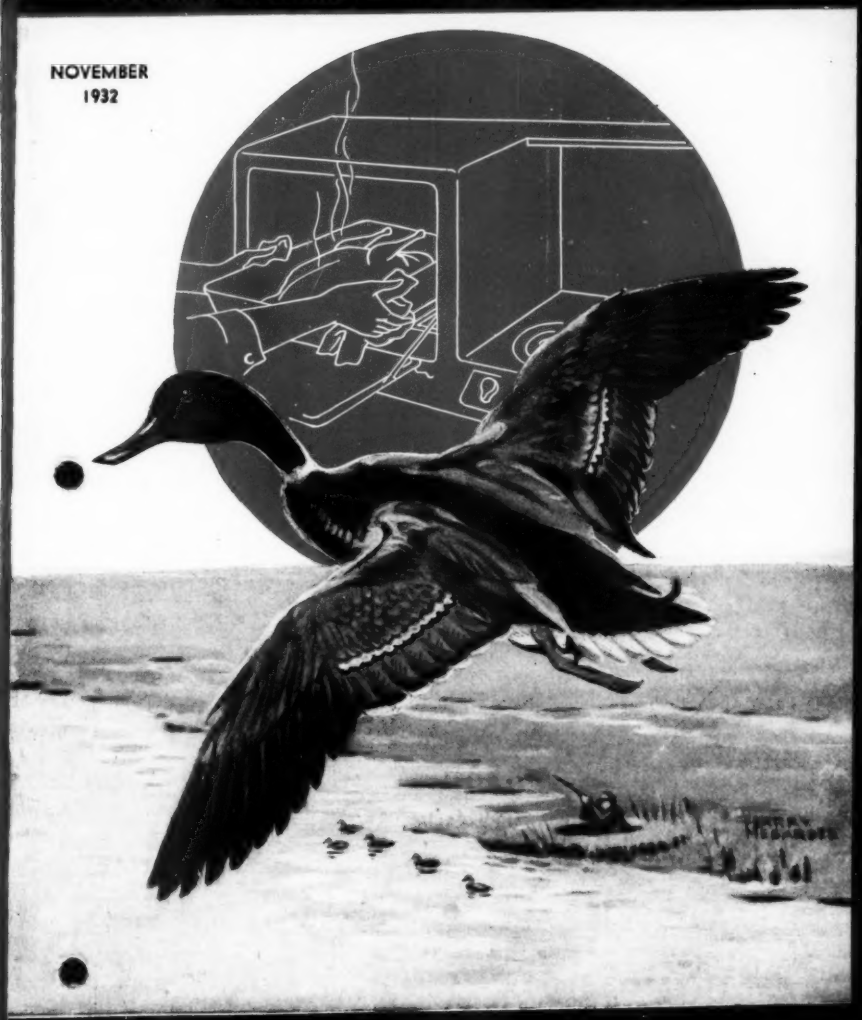
Electricity on the Farm

A Monthly Magazine for the Progressive Rural Family

NOVEMBER
1932



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The "Hostess," one of the five most popular Hotpoint Electric Ranges

Give Mother what she really wants—a new General Electric Hotpoint Range. Mother knows that Hotpoint is faster, far more economical, as clean as electric light—thanks to Calrod, General Electric's fast, new heating coil in the Hotpoint range.

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There are scores of reasons why G-E Hotpoint is the range every woman would like to have.

See the "Hostess"—one of the beautiful new G-E Hotpoint Electric Ranges.

The magic Thrift Cooker in General Electric's beautifully modern Hotpoint Electric Range will cook an entire meal—vegetables, meat, dessert—at one time and without intermingling of flavors or odors. The Hotpoint Thrift Cooker uses electric current at high-heat only one-eighth of the cooking time.

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There never has been a greater need in agriculture for efficient operation and economic production. And no better chance to prove its value has ever been given to electricity.

Below is a hand-picked list of manufacturers and electrical equipment deserving careful consideration. These have all proved their worth in actual operation for other farmers, some in your very neighborhood.

Get acquainted at once with these manufacturers by writing for free literature which they offer.

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For information about devices not included in the above list and the names of reliable manufacturers—use this handy coupon.

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ELECTRICITY ON THE FARM, 24 W. 40th St., New York

Without cost to me, please have manufacturers send complete information on the following Electrically Operated Equipment which I am thinking of buying:

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....

My name is.....

Address .....

..... 11-32

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New, Visual Utensils take Guesswork out of Surface Cooking!

No more burned food—no more undercooking—no more guessing whether "it's done" when you use this new, modern method. Monarch Visible Cookery makes electric surface cooking almost automatic! Food flavors are sealed in, for there's no need to take off the cover—active boiling is the signal to shut off the current. What could be easier or more certain? The utensils are heavy gauge aluminum—the covers are Pyrex glass. Flat bottoms, straight sides and diameters corresponding to Monarch Electric Range "Hi-efficiency" Units assure maximum efficiency.

Your electric light company will be glad to show you this modern outfit, or write direct to factory. The low price will be a pleasant surprise.

MALLEABLE IRON RANGE CO.

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YOU CAN **SPEND** YOUR **MONEY**

AND

HAVE It Too!

IMAGINE such a thing!—*"Spend* your money and have it, too". But stop a moment and reason it out for yourself.

As a consumer, you know that practically everything you buy costs less today than for many years past. In a large number of cases, your dollar today has grown in ***purchasing power*** to such an extent that about ***half*** of it will buy the same commodity that it takes ***all*** your dollar to buy in normal times.

So, you see—you can ***save*** half your dollar and ***spend*** half your dollar—and still acquire as much in goods as your whole dollar would bring you ordinarily.

To win sales and good will, manufacturers and merchants must first win the ***confidence*** of customers. To do that, goods must be honestly made, fairly priced—and honestly advertised. So today, perhaps more than ever before, advertising is a protection to the consumer and a builder of business.

ADVERTISING BUILDS BUSINESS

AND PROTECTS THE CONSUMER

ELECTRICITY ON THE FARM

NOVEMBER, 1932

No warmth, no cheerfulness, no healthful ease—
No comfortable feel in any member—
No shade, no shine, no butterflies, no bees,
No fruits, no flowers, no leaves, no birds,
No-vember!

—THOMAS HOOD.

Was Thomas Hood fair in his arraignment of November, particularly insofar as farm life is concerned? Let's see: there's no warmth, except in the hearts of those in homes throughout the breadth and depth of the land—a warmth increased as the chill days bring us closer together.

No cheerfulness, except in the souls of all true and enlightened Americans who are looking forward to, and planning on, the future. No healthful ease; but who wants to be idle in November? The brisk November air makes work enjoyable; inspires us to get ready for cold weather ahead.

No comfortable feel in any member—and is it well that we feel not too comfortable when there is so much to be done. Better be like the ant, which enjoys the work, than the grasshopper, which is content to idle away its time until the arrival of cold weather ends its existence.

No shade? Who wants it in November?

No shine? The sun still shines in November if one would look for it. And as for butterflies and bees, we should all be too busy to miss them.

Fruits there are plenty, but carefully preserved and stored away as provision for winter.

Flowers and leaves we cannot expect to have the whole year through; we can be content to do without them when most of our leisure time will be spent indoors in the bosoms of our families.

Birds still remain, and the kind that bring a thrill to the heart of every true sportsman. November first marks the opening of the hunting season in many sections.

Maybe Thomas Hood was a pessimist, and saw life through smoked glasses. At any rate, we disagree with him.

We think November a delightful month, a healthful month, and one which all should enjoy.

Warming

WATER FOR POULTRY

By CHARLES E. SEITZ

BY warming drinking water in the poultry house to prevent freezing, electric water heaters will save time and labor and prevent the usual drop in egg yield which results when laying hens do not have sufficient drinking water before them at all times.

If the hens are expected to keep on manufacturing eggs they must have a constant supply of fresh water. From the hen's viewpoint water is worth just as much as feed, for the hen cannot make an egg with either one alone.

The egg is composed largely of water, as is the hen's body, so while water is one of the cheapest essentials it is also one of the most important. If the water in the drinking pan is frozen so that the laying hens do not have the necessary amount of water at all times the egg yield is sure to drop. Any drop in egg yields results in serious loss on the poultry farm having a large number of laying hens.

Heating Increases Consumption

Tests conducted at experiment stations indicate that poultry drink 25% more water in houses where the water is kept warm than in houses where the water is not warmed. Experiments also show that when laying hens were given water only once a day as compared to hens having water at all times, the egg production was reduced at least 50%. It will pay any poultryman to see that the drinking water is not allowed to freeze.

A good electric water heater will insure warm water during the coldest weather. Electric heaters can be purchased on the market or made on the farm. A satisfactory heater should keep the water from freezing without overheating. It should be simple, inexpensive, easy to use and low in operating cost.

Two Main Types

Electric heaters in general use are of two main types; external heaters or those that apply the heat to the outside of the water container; and immersion heaters or those that apply the heat by placing the heating unit directly in the water. The merits of these two main types of heaters are set forth in Station Circular 81 of the Oregon Agricultural Experiment Station. In discussing the merits of the two types the authors say:

"Immersion units may be used in any open top container regardless of material or shape, such as wood troughs, pails, pans, or earthenware jars (percolator element cannot be so used.) Since the heater is immersed in the water all of the heat is transferred to the water. It is always ready to use by plugging into a lamp socket and it may be easily removed for cleaning the container.

"Some of the disadvantages of this type are that it will burn out quickly if the pan becomes empty or if the heater is accidentally displaced or removed from the water while the current is on. The cost of these units is more than for external heaters, and because of their shorter life they cannot be recommended from a comparative economic standpoint.

"External heaters are relatively

easy to apply to most metal containers; they will not burn out if the pan becomes empty; fowls will not displace them; the cost is comparatively low and the better styles are efficient heaters.

"If 'clamp on' heaters are placed on the bottom of a pan, they interfere with placing the pan on a flat surface and some other means of support such as a slatted frame or a board with a hole cut in it must be provided. The heaters should be kept away from inflammable material for the sake of safety from possible fire."

Used for Many Years

Simple home-made water heaters of the external type have been in successful use for several years at the Glen Falls Hennery, owned and operated by C. W. Fricke a successful poultryman of Albemarle County, Virginia. Mr. Fricke made and is using a number of the "frost-proof" drinking pans as he calls them. He states that they have proven effective in the coldest weather. In writing me in regard to the use of his water heaters Mr. Fricke said: "I feel sure that it has paid me well to use these devices.

"There is no question but that hens will drink a lot more water from pans that are not frozen than from those where they must peck through ice to get a drink. I find we have many days and nights here in Virginia when drinking pans will freeze in open or curtain front poultry houses. During the early morning hours in particular when hens are through scratching under artificial light it is indeed essential that the birds are not deprived of water until some one gets around to break the ice and distribute warm water through all the pens.

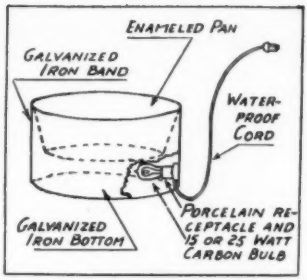
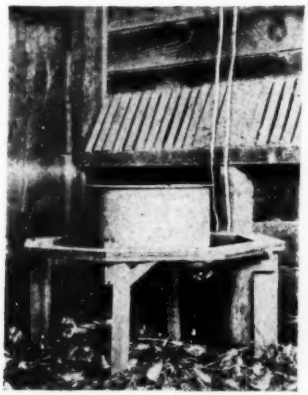


Diagram of frost-proof drinking pan used in various sizes throughout the poultry houses. The sanitary enameled pans are most easily removed, cleaned and refilled three times a day when necessary.



Frost-proof drinking pan in place in one of the Fricke poultry houses.

"Whenever we suspect a hard freeze before morning, I simply turn on the lights under all the pans and leave same on until the outside temperature rises above 32 degrees. I do not aim to heat the water at any time and use only the smallest size bulbs that will keep the water from freezing.

Fresh Water Twice Daily

"We distribute fresh water two times each day regularly and three times daily during hot weather. Think of the time and labor that is saved during freezing weather when we do not have to carry hot water from the house to thaw out the ice from each pan before fresh water can be distributed.

"In our largest pens we use one enameled dish pan for about every

IT IS GREAT, and there is no other greatness—to make one nook of God's creation more fruitful, better, more worthy of God; to make some human heart a little wiser, manlier, happier—more blessed, less accursed.

—Carlyle.

100 birds. In the smaller breeding pens, 4 and 5 quart drinking pans are used. The reason I prefer at least three pans in every pen containing from 250 to 300 hens instead of one fountain of greater capacity is; first, because more birds are able to drink at once without crowding; and second, because the open pans are more easily removed and cleaned than the larger automatic fountains that hold from 5 to 10 gallons. The latter will become polluted and need cleaning quite as often.

"Moreover if it pays any one in this state to use frost-proof fountains of any kind, I believe you will agree with me that the electrically heated type such as I use are very much safer than some that are in use. Imagine the time it would require just to light 15 to 30 oil lamps under drinking fountains to say nothing of the added risk from sparks and matches."

Mr. Frick's "frost-proof" water heater shown in the sketch consists of an enameled basin which rests in a home-made galvanized-iron pan of 28 gauge material. This pan is equipped with a porcelain receptacle to which a carbon bulb is attached. Any size bulb can be used but Mr. Fricke finds a 15 to 25 watt bulb gives off sufficient heat in his "frost-proof" heater to prevent the water freezing.

Try an Electric Heater

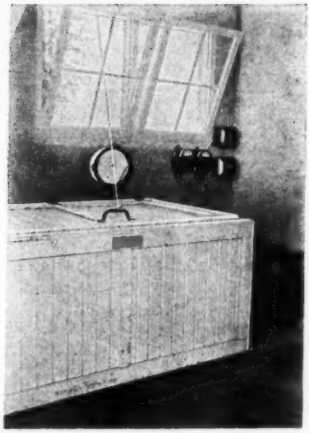
Any farmer having difficulty in keeping the drinking water in the poultry house from freezing in cold weather and who has his poultry house wired for electricity should try out some type of electric heater. A list of manufacturers of such equipment can be secured by writing the editor of this magazine.

Residence of Mr. Fricke on his Virginia poultry farm. Mr. Fricke is an extensive user of electricity.

BETTER MILK

for less money

By R. R. PARKS



Bottled milk and other dairy products are stored in this chest-type refrigerator box. The box is cooled with bare copper coils around the interior. A thermal expansion valve admits more or less refrigerant to the coils as the temperature changes.

MR. R. L. McLACHLAN, a dairyman near Columbia, Missouri, could not comply with the milk ordinance of that city without going to quite an expense to renew his barn floor, refinish the interior, and work it over in general. The same was true of his milk room, which, although serviceable and well kept, was not in technical accordance with the law that was being enforced by a strict inspector.

Prepared to Serve

After much concentrated thought on the problem and probable expense, Mr. McLachlan decided to put up a new building.

"We get too satisfied with ourselves and methods," he explained to me one afternoon. "We want to have friends and perform a service they will be glad to pay for, yet we dislike criticism and want no one to question our work or our equipment.

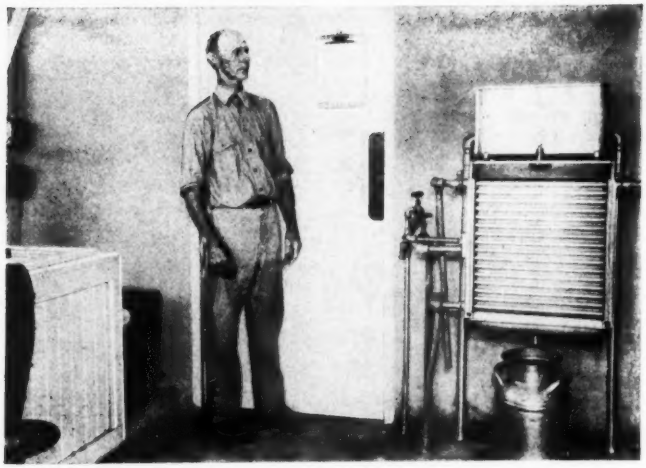
"I dislike a patched up job and when the Inspector showed me a picture of this Texas type of building, I decided the least expensive change and the one more satisfactory to me would be to build new. And there it is," he said pointing out to the new dairy building.

From the front drive the white trimmed stucco building with red brick corners, looked like a bungalow just ready for occupancy. The screened doors and windows gave a distinct impression of cleanliness. Inside, the white windows leaning in at the top, the cool white plastered walls, and the clean concrete floor confirmed that impression.

By the side of the door where we came in stood a cream separator. To the left of this was the refrigerator chest for storing crates and cans of milk. On the opposite side of the room was the aerator for pre-cooling the milk with water and brine before putting it in bottles.

The Wash Room

Passing through the swinging door into the wash room, we found two waist-high tubs for washing and rinsing bottles and utensils. Over one tub was an electric bottle washer and underneath was a heater for heating the wash water. In the opposite front cor-



Mr. McLachlan is well pleased with his new dairy building because it is so easy to keep clean.

ner of the room stood the stack of clean bottles in crates ready for use.

Going outside the washroom door we discovered the "annex," as Mr. McLachlan calls it. It is a low double roofed enclosure, four feet square, for protecting the insulated brine tank from the weather. One hundred ten gallons of brine are kept in this tank at ten degrees fahrenheit. Although water cools the milk to sixty-five degrees, the brine is necessary to further reduce the milk to forty degrees.

Milking Barn Exceptionally Clean

Next we entered the "milking barn" of this dairy. Here the walls were plastered, the feed mangers were exceptionally clean, and the floors had been washed down and sprinkled with lime. There was stanchion room for four cows. We were told that the herd is milked in shifts of four each and very seldom does a cow get out of order or place in the line-up for feed and milking. At first, Mr. McLachlan explained, the excitement of a new barn was hard on the white walls; however, even the cows now have the idea of cleanliness and very little difficulty is experienced with them.

The whole building is sixteen by twenty-four feet. The milk room, the wash room, and the milking compartment are approximately eight by twelve, eight by twelve, and twelve by sixteen respectively. The building and partitions are of tile, stuccoed on the outside and plastered inside. The roof is covered with heavy composition shingle. The attic is ventilated at each end by shuttered windows. The building has only one inside door. It leads from the milk room to the wash room. The milk room and wash room each have outside doors and the milking compartment has two doors, one for the cows and one for the attendant. The house has four sets of double windows and two single windows.

"But what did it cost?" we finally ventured. "Well," replied Mr. McLachlan, "you won't believe me, but the building itself cost less than $600 actual cash. We had a carpenter out from town but we

did most of the work ourselves. We watched our material buying closely and paid cash. The refrigerating equipment cost an additional $425 without the brine pump or aerator. We have capacity for sixty gallons of milk a day, but we are only handling twenty-four now while school is out."

"What does it cost to cool your milk electrically?" we asked. Mr. McLachlan replied that the equipment had not been in operation long enough to give dependable cost figures; however, for June of this year he used one hundred eighty-five kilowatt-hours of electricity costing $9.25. During the month he cooled approximately twenty-one gallons of milk a day.

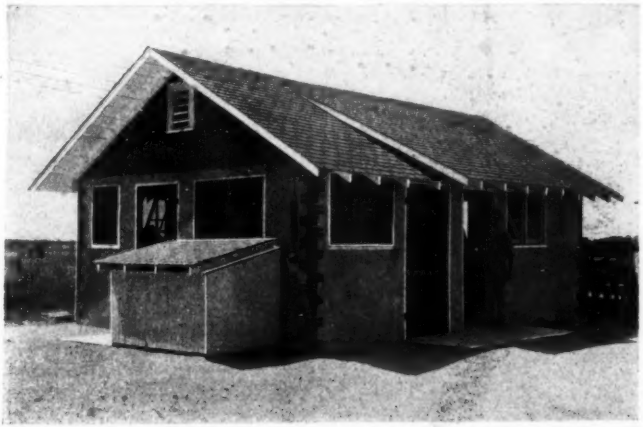
Pleased with Equipment

"I've come to believe," said Mr. McLachlan, "that profitable milk production is not a matter of crying for more business and doing it on the lowest dollar possible. We take pride in our equipment. We like to see the Inspector come around, and we enjoy making friends of our customers and competitors. We know that our new lay-out is helping us produce clean milk at less expense and I wouldn't think of going back to the old method."

Power Ripens Citrus Fruit

Florida citrus fruit which matures at the first of the season has a delicious flavor but lacks that mellow golden color ordinarily associated with ripe fruit. Electricity is now used to supply this essential hue.

Typical of modern citrus packing and preserving plants is one at Indian Rocks, Florida. This plant has recently added two more coloring rooms in which are electric strip heaters. Other electrified equipment in the plant includes heavy duty electric griddles, sizing and grading machines, pumps, packing machines and miscellaneous conveyors for handling the fruit.



This dairy building houses the milk room, the wash room, and the milking room. The cows are milked, four in a shift, in the far half of the building. The milk is brought out and then into the milk room at the front corner of the building. Bottles and utensils to be washed are taken from there into the washroom, or bottles from the outside are taken through the outside door into the wash room. The cows have a "loafing barn" for shelter.

Air conditioning develops sturdy

GREENHOUSE PLANTS

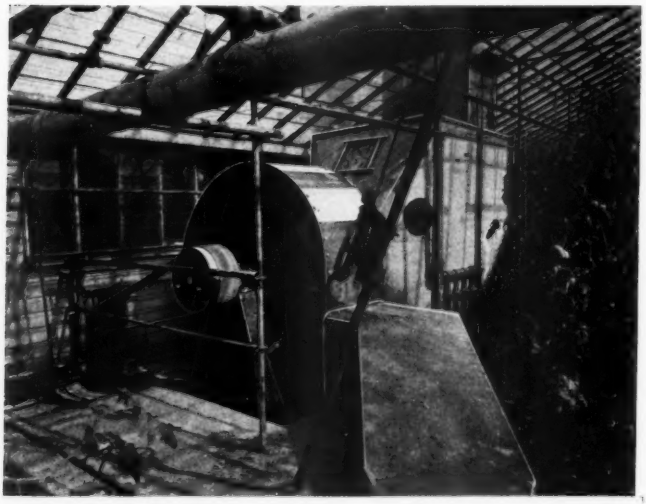
By R. C. HIENTON

AFTER several years of trial and experimentation by several greenhouse operators in the Greater Cleveland district, suitable equipment has been developed to control the temperature and humidity in greenhouses during the growing and blossoming season of the crop.

This equipment, which is really air conditioning equipment, enables the grower to practically eliminate losses from leaf mold, more commonly known as mildew; and also to equalize temperatures in the greenhouses, which is very helpful in extremely cold, windy weather.

Leaf mold has caused large losses year after year to greenhouse growers in this district, on both the fall and spring crops. There are usually protracted periods, during both the spring and fall growing seasons, when temperature and humidity are abnormally high. Spores of the leaf mold germinate rapidly when the relative humidity is above 96 at a temperature of more than 75 degrees Fahrenheit; and in a short time can so seriously injure the growing crop that it is impossible to realize a profit from it.

The growers were handicapped in their efforts to combat this cost-



Forced ventilation of pre-heated air means large tomatoes earlier in the season for the F. J. Pock greenhouses in Brooklyn Heights near Cleveland; picture shows air intake to large fan, and pre-heater equipment.

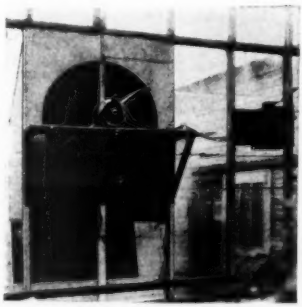
ly plant disease until the idea of forced ventilation was developed as a preventive several years ago by The Darrow Garden Company, greenhouse operators at Boardman, near Youngstown, Ohio, and a year later by The Peck Brothers at Brooklyn Heights, southwest of Cleveland.

Positive Air Movement Required

The problem is to design a system that will provide enough air movement to lower the humidity below the danger point, on the hot days when the plants are transpiring freely. It is the opinion of the above growers that there must be a positive air movement in order to prevent the humidity building up enough on the leaf surface of the plant to permit the spores to germinate.

At the greenhouses of The Darrow Garden Company and The Peck Brothers, this positive movement of air has been obtained by blowing air, taken from outside the greenhouse, through a large conduit into the individual houses.

In the Peck Brothers' greenhouse the air movement is obtained by blowing air through a 36-inch conduit placed directly underneath the cross-walk. Steam coils are placed in the outside air duct, so that the air may be preheated, before it is discharged into the houses.



Inside greenhouse view of one of the fans used for temperature equalization at the Dunbar-Hopkins greenhouses, Ashtabula, Ohio.

Outside greenhouse view of one of the fans used for temperature equalization at the Dunbar-Hopkins greenhouses, Ashtabula, Ohio, showing vent hanging downward when fan is operating.

There are two discharge spouts for each half house, with the spouts having openings at the top and about two feet above the ground. The top opening is about eight feet high, and is used until the crop is fully grown and the bottom part of the stalk has been trimmed off. It is easier at that time to get the needed circulation by using the lower vent. The bottom opening is 8 inches wide by 12 inches high, and the top opening is 20 inches wide by 16 inches high. There is a ventilator at the end of each half house, which is opened when the ventilating system is in use.

A 20-horsepower, 440-volt motor is used to drive the fan, which has a rated capacity of 27,000 cubic feet of air per minute. The motor is set in the bunching room next to the greenhouses, but the fan housing and preheater are located in the greenhouse proper.

Mr. Peck grows a crop of spring tomatoes, and the ventilating system has lengthened the life

Mr. Peck picking tomatoes near end of season. Greenhousemen will notice at once the complete absence of mildew damage.

of that crop to such an extent that he plants radish or lettuce for his fall crop, rather than tomatoes or cucumbers. He started picking tomatoes this spring on April 12, and on July 20 was still picking almost 2000 pounds of tomatoes every other day from his one and one-fourth acres under glass.

There have been from 10 to 12 clusters of tomatoes on every plant, instead of the customary seven to nine, and Mr. Peck reports that his tomatoes have not only yielded more per acre, but have also consistently graded higher, since the installation of the ventilating system.

Fumigating More Successful

Mr. Peck also uses his system for fumigation, and reports that he is very successful in obtaining good results, as the smoke settles closer to the ground and he can use a stronger mixture with less burning. This result is obtained because the dust is more evenly distributed and does not settle in spots throughout the house.

Another interesting result has been that the last five or six clusters of tomatoes each year have not been set by hand pollination, but the set has been obtained by the air from the system circulating through the greenhouses.

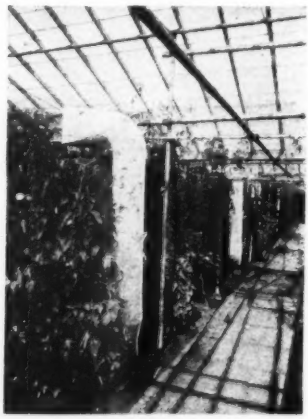
The ventilating system is used only when atmospheric conditions in the greenhouse are conducive to the development of the leaf mold. Mr. Peck estimates that he has used the fan an average of 600 hours per growing season since it has been installed.

Mr. Peck estimates that his increased yield, due to the ventilating system, is about 30 per cent for a three year average. He feels, however, that his biggest gain is that the ventilating outfit insures a good crop, season after season, and he also feels that the original investment was returned in two years because of the increased income realized, due to the larger yield and higher quality crop.

Robert Dunbar of the Dunbar-Hopkins Company, at Ashtabula, has installed several ¼-horsepower motors directly connected to two-blade propeller type fans set in outlet vents at the end of each house.

By this method Mr. Dunbar ex-

(*Continued on page* 34)



Pre-heated air is forced into the greenhouses through these outlets. Notice healthy appearance of plants at the Peck Greenhouses, Brooklyn Heights, near Cleveland.

A cleaner, more dependable method of HOTBED HEATING

By R. R. PARKS

ELECTRIC heater cable is replacing manure in many hotbeds used for early planting in St. Louis County. Electricity has been shown to be desirable in botbed heating because it is clean, free from odors, easily handled, dependable and in many cases more economical than manure.

The method of heating is simply to lay the heater cable out in the old manure hotbed frame. Fill the frame in with six inches of hotbed soil, connect the 110 volt supply wires and turn on the current. (See Fig. 1.)

At night the bed should be well covered with boards, and a tarpaulin if one is available. In the day time during moderate weather the heat should be turned off and the sashes uncovered to admit a maximum amount of sunlight through the glass. The sash glass should be kept clean and tight. as the plants develop in size they require more ventilation than when they are starting so provision must be made for this on warm sunshiny days when safe temperatures will not be sacrificed for ventilation. It is well to remember that dark surfaces absorb more light and consequently more heat than do light ones so the hotbed soil should be moist on top for it to absorb a maximum amount of the sun's energy.

Many different schemes have been tried to insulate the electric hotbed against heat losses. To minimize conduction losses, insulating beds of charcoal, cinders and sand have been used under

Fig. 2—No more manure for these hotbeds. They were wired to be electrically heated in 1931.

and around the hotbed soil. For minimizing radiation losses the beds have been covered at night with various kinds of mattings, and double sashes have been suggested for day use. Convection losses can be reduced to a minimum by raising the hotbed frame only high enough to give the plants room for healthy growth. While many of these schemes remain of unproved value, it is well to remember that heated hotbed air rises toward the "cold" glass sash, carrying a heat load with its constant circulation. A well blanketed sash will stay relatively warm at night and minimize the heat losses through the sash over twelve or more hours of the 24 hour day. If insulation is to be placed beneath the hotbed soil, it must be remembered that all capillary water has been shut off and water must be supplied by the attendant.

Proper Ventilation Important

With the low wattage immersion heaters used, quite often the rise in temperature of the bed soil is not more than 1 to 2 degrees for each hour the heat is turned on. Therefore, a difference of an hour or two in the time the heater is turned on or off is of little importance so far as temperature is concerned. A matter of greater importance to hotbed heating with immersion cables is the slow heat and "off" periods when the heat is allowed to spread evenly over the entire bed. The handling of hotbed sash and cover is also very important and proper ventilation is a job which is difficult for automatic devices. Weather predictions can be observed and better operation can be obtained by covering the beds early in the evening and turning on the heat if the night is to be cold and again turning the heat off early in the morn-

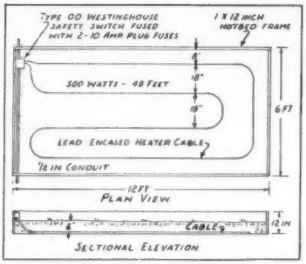


Fig. 1—Installation of electric immersion heater cable in a six by twelve hotbed frame.

Following is the Cooperator's Record of What Happened

	Days of Operation	KwH Used	Cost	Temperatures Outside	Temperatures Inside
Feb. 2 heat was turned on Feb. 6 bed was warm ready for planting	4	68	$1.70		
Feb. 6 bed was planted to lettuce and cabbage Feb. 8 lettuce sprouting Feb. 9 cabbage sprouting Feb. 11 lettuce well up Feb. 18 plants transplanted	12	177	4.43	88 68 44 54 61	64*44 10 26 35
Feb. 18 tomatoes planted Feb. 23 plants up and growing, heat turned off	5	76	1.90		
Mar. 28 plants 4 to 6 inches tall. "Very strong." Small additional heat having been used since Feb. 23	33	114	2.85	105 71 40 51 61	81 56 17 36 46

*Temperatures given are placed in the order:
Maximum, average daily maximum
Minimum, average daily minimum, average temperature

ing if the day promises to be a warm sunshiny one.

The cost of materials for equipping a 6′ x 12′ bed of the type described here should be very low in comparison with other heating methods. Forty-eight feet of heater wire having a resistance of 0.450 ohms per foot (20° C.) are used in a 6′ x 12′ bed. Such low wattage cable can be connected direct to an inclosed, fused, safety switch on the inside of the hotbed frame with safety to the operator and equipment. The cost of such a switch is less than $2.00.

Operating Cost

The cost of operating a hotbed will of course depend on the weather, insulation, ventilation, and general operation care. During the 1930 spring season seven electric hotbeds using immersion heaters were used in St. Louis county. Electricity costs on these varied from $3.00 for one 6′ x 12′ bed to $13.00 for one 6′ x 16′ bed. The details of operation on the 6′ x 16′ bed are interesting and representative of the rest considering the use to which they were put. The bed was made February 2 by laying the heater cable on five inches of frozen soil inside a 6′ x 16′ frame made of 1″ x 12″ unfinished lumber. Six inches of hotbed soil was then thrown over it and the heat turned on after the bed was covered with sash and boards for insulation.

The cooperator, Mr. Harry Maenner, Route 1, Affton, Missouri, made this statement after the test had been completed. I think the electric hotbed is all right because, if I can get the material, I will make all of mine electric next year." He is operating sixteen beds this season.

Pumping Cost Is Low

WATER at the turn of a faucet is accepted without question in towns by many who regard it as an extravagance on the farm, yet in most cases it can be had in the farm home for less money than that paid for water in the city. The average cost of water per 1,000 gallons in 1,000 American cities is 37.2 cents, while a modern water system will pump 1,000 gallons for not more than 10 to 12 cents, including interest, depreciation, etc., as well as actual operating cost and upkeep.

If farmers were compelled to pay out cash for the time spent by members of their families in carrying water, when the time might be profitably spent in care of the poultry flock, working in the dairy and garden, baking, canning and sewing, there would be fewer farms on which water would be carried into the house with buckets or pumped by hand for the stock.

Butter Keeps as Well in Prints as in Tubs

The belief that butter for storage has to be put up in a large mass, usually 64-pound tubs, has been disproved in recent years by experiments which indicate that butter in 1-pound prints keeps as well as that in tubs, says the United States Department of Agriculture.

For the last eight years a creamery in Pennsylvania, cooperating with the Bureau of Dairy Industry, has stored 20,000 to 25,000 pounds of print butter annually in a cold-storage warehouse in Washington, D. C. This was fine quality butter made from unripened, pasteurized, sweet cream. Some of it was stored for as long as seven months. After storage the butter was sold to people accustomed to getting fresh butter from that creamery, and they found it entirely satisfactory.

Butter handlers believed butter should be stored in tubs because this form exposes less surface area per unit weight of the butter. The experiments indicate, however, that sweet-cream butter in 1-pound prints will keep as well and shrink as little as if stored in 64-pound tubs.

From the Apple Barrel

IT is apple time the country over. When you are using the oven for baking these cool days, it is a thrifty trick to tuck in some apple desserts that will bring a broad smile to the family dinner table, and make a very little impression on the family budget.

Apples can be baked on the heat stored in the oven of an electric range after the other food has been cooked and the current turned off. And baked apples take on quite an air if you fill the cavities with sugar and butter, a few nuts or raisins, or even a spoonful of jam. They look like a party if you top them with a candied cherry or a few cooked cranberries.

My grandmother's apple dumplings made of a rich biscuit dough rolled thin and filled with quartered apples, dotted with butter, and sprinkled with sugar and cinnamon remain the most entrancing dessert of my childhood. She always served them with a vinegar sauce that was rich and thick and sweet. I make a turnover with ordinary piecrust and apples that receives considerable acclaim, but it cannot match the dumplings.

The Bureau of Home Economics of the United States Department of Agriculture points out that apples also appear to advantage in a cobbler with the biscuit dough on top, and Dutch apple cake with the dough beneath, apple tapioca pudding, and upside down cake.

These desserts sound a lot like Mark Twain's famous pies, don't they?

"Three kinds—open-faced, cross-hatched, or kivered—all apple."

And apples go well with the rest of the meal, too. Try scalloping them with sweet potatoes or cabbage, or cook them with pork chops in a casserole and bring them to the table steaming hot.

Hot or cold baked apples are good

• • •

Home-made Weather

WHEN we have our weather made to order, of course we want it made right. We have been thinking, this last generation of us, that we had the weather pretty well under our thumbs, because our central heating plants made comfortable temperatures all over the house.

Problems for Consideration

That is where we went astray. We assumed, not surprisingly at all, that if we made cold air hot that was the end of it. Our job was done. It seemed like a mighty achievement, but it has proved to be a Pyrrhic victory after all. For we have had to sit by in these well heated houses of ours and watch the joints of our chairs fall apart because the glue dries out; we have had to watch cracks yawn wider in the woodwork and straggle in long jagged lines across wall or ceiling.

Then the engineers who study such matters told us that temperature was only one of the things

to consider in our indoor weather. The motion and humidity of the air were both important.

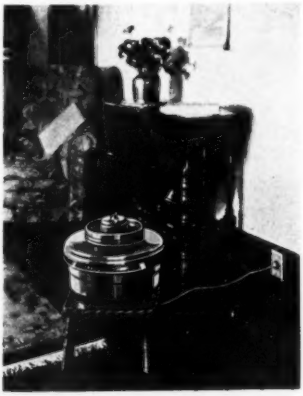
So we hung a pan of water behind the radiator and rejoiced that the temperature differences between outside and inside took care of keeping the air in constant motion for us.

But that did not make us comfortable; and various engineering bodies had to take a hand again. The American Society of Heating and Ventilating Engineers and the United States Bureau of Mines and the United States Public Health Service co-operated in a long series of tests to find out just what weather did make people most comfortable.

They found that for ideal weather the thermometer stood at 70°, and the hygrometer—the instrument that measures humidity, reported from 35-40%.

Our pleasant indoor weather, this weather we have been boasting about around the globe, frequently has a humidity of from 15% to 20%. No wonder our houses felt dry. This is just a little dryer than the hot blasts that sweep through Death Valley, and just a little dryer than the Desert of Sahara.

You see it is this way about



This bowl can be carried about easily. It comes with a pedestal, too, if you want it.

There is a small heating element in this bowl that evaporates three quarts of water in about twelve hours.

humidity. Heating the air increases its capacity to hold moisture tremendously. And we have been taking a houseful of winter air with a temperature say of 31° and a moisture content of 70%, and raising the temperature of that air to 70°. When we did that we decreased its humidity to about 17½%, which is, as you can see from the engineering tests spoken of above, far below the level for comfortable living.

It is because this dry air is forever trying to get its fill of moisture that it takes it from our skin, from the plaster on the walls, from the very fabric in our curtains and rugs and blankets.

Dry air plays havoc with fine furnishings.

In short, the Society of Heating and Ventilating Engineers has quite convinced us that we can no longer depend entirely on the coal shovel for making our winter weather.

Weather Comfort at Home

Business refused to do that some time ago. In fact, it kept these engineers so busy creating exactly the right weather for some two hundred different industries that need a particular brand, that they are only just getting around to hold up their hands in horror at the weather they live in at home.

The cone you see projecting below the top of this humidifier spins in the water, driving it up against the vanes on the plate above. There is a fan in the dome that blows the air down through a spray.

Hotels, theatres and restaurants are shrewd enough to cut their weather to fit the comfort of their patrons for they can see the difference in their receipts dispensing comfortable weather brings.

You cannot check the financial savings of improved weather inside the home quite as definitely. But you know that they will be spread over longer life for rugs and blankets and floors; longer beauty for fine woods. You know too that they will be reflected in decreased coal consumption for increased humidity makes lower temperatures more comfortable, and water is certainly cheaper than coal.

Air Requires Moisture

Getting water into the air, then, becomes quite as important a part of making this indoor weather as getting the coal into the furnace. Hanging a pan of water behind the radiator did not do the trick because the evaporation there was too slow. But there are a number of devices on the market today that will actually pour water into the air for us. Some of them are in fact, complete weather makers.

One is a single plant installed in the basement like any other heating plant. Pipes lead from it to air outlets in every room of the house. Cold air pipes lead to it from return ducts placed in various places in the first floor. The air comes down these ducts and is drawn through a filter by a motor driven blower. The dust and dirt is caught on the meshes of the filter and clean air passes through the heating chamber, and then through a section where water is being evaporated into the air at just the right speed to give the air the proper moisture.

Blower Provides Circulation

The blower draws the air through the unit again and again, so warm, moist, clean air is continually circulating through the house.

A man makes his own weather with a plant like this simply by lighting the gas and turning on the motor of the fan.

There is another weather making unit that fits into any hot water, steam or vapor heating system. It takes the place of one of the radiators, and is housed in a fine looking cabinet that may be made of wood or stained steel.

This unit is connected with the city water supply and to the heating system. It has a motor that draws the air in past scrubber

A floor type humidifier.

plates that wash it clean before it passes through the heating coils, and into a fine spray that gives it moisture before it passes out into the room.

The fan insures a constant circulation of the clean, moist air. The ordinary furnace control keeps the temperature steady in a system like this, and a second control on this special unit, keeps the humidity just where you want it.

These are weather makers de luxe.

Besides there is an ever growing group of portable humidifiers that can be set up in any home to correct the dryness of the heated air. They are electric affairs with a motor or a heating element that can be run from a convenient outlet anywhere.

Hastens Evaporation

The small heating units keep water simmering away in a vessel just fast enough to hasten its evaporation into the room. The motor in several models drives a cone upside down in the water. This cone throws the water against vanes or plates that silently break it up into a fine mist, easily taken up by the air. Some are designed with a fan in the top of the bowl to draw the air through the spray.

This is another motor-driven humidifier.

This compact urn holds 2½ gallons of water. It evaporates a little more than a quart an hour.

This washes it free of dust or smoke and even washes some of the smells from the air as it passes through.

These portable humidifiers come in all sorts of shapes and sizes. They evaporate differing amounts of water, too. So a study of their capacity is quite as important as a study of their appearance when you are selecting one for your living room.

One of the engineers at the University of Wisconsin estimates that an eight room house in his locality requires the evaporation of about a gallon an hour to keep the humidity up to 40%, a condition he looks upon as ideal.

Apply for Data

Your own Public Health Department will doubtless be able to tell you what you need in your community.

You can get these small shower plants in various metal containers. Some of them are painted to look like pottery; some are finished in dull bronze that slips into the background of any room. There are two small table models that are particularly attractive. One looks like an antique urn of dull

(*Continued on page 29*)

WHAT'S NEW

Reviewed by TRUMAN E. HIENTON

Poultry Water Heater

HEATING water to prevent the formation of ice over top of the water in drinking vessels is a common practice with poultrymen, especially those who use morning lights to stimulate winter egg production. Poultry specialists indicate that a constant supply of water is important to maintain high egg production because of the large percentage of water in the egg.

A recently announced water heater consists of a flexible rubber pad, approximately $\frac{1}{8}$-inch thick, 3 inches wide, and 9 inches long with 10 feet of all-rubber-insulated cord and rubber plug. A 30-watt, 115-volt heating element is vulcanized in the pad. One pad is recommended as sufficient to keep surface of 12-quart pail free of ice in average poultry house with outside temperature at 5 degrees F. The unit will not burn out in air but its life will be shortened if operated in air for appreciable periods.

Combination Table and Attachment Ironer

The wringer post or attachment ironer which has been found so useful for all types of ironing and eliminates much of the drudgery in connection with this task is made more valuable to the homemaker by means of a new conversion unit which changes it into a table type ironer. This not only minimizes the heavy lifting connected with interchanging wringer and ironer on the washing machine wringer post, but also allows the ironer to be placed at the most convenient height for the operator and to be used any place in the house.

Automatic Egg Cooker

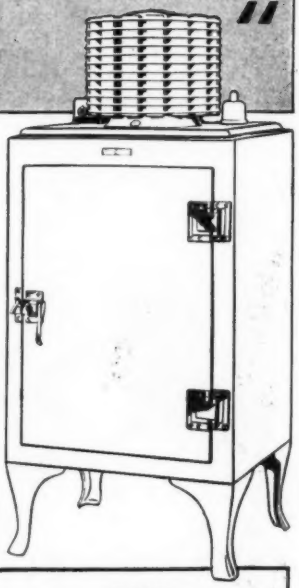
A new electric egg cooker for automatically cooking the breakfast eggs to just the right degree of hardness, is now available. A teaspoonful of water is added to the cooker for each minute the eggs are to cook. By having the unit entirely enclosed no water can come in contact with it and the possibility of any variation in the wattage of the unit is eliminated. When the water in the cooker is evaporated, the thermostat automatically cuts off the current and a bell rings indicating that the eggs are ready to serve.

Portable Power Truck

Portability of a farm power unit, particularly an electric motor is an essential feature in securing maximum benefit of its use. Motors of 3.- 5.- or 7.5-horsepower capacity, when equipped for easy movement from one machine to another are used much more frequently than when not portable, and eliminate the necessity for individual motors.

A drive truck on which any of the commonly used sizes of motors required on the farm may be mounted has recently been announced. This truck is of rigid welded-steel construction with broad tread wheels. A wide shovel stop in front is adjusted with a lever and it with two sliding steel stakes in the rear provides the footing for indoor or outdoor service. The motor is so mounted that its weight maintains the belt tension.

"FOUR YEARS WITH NEVER A CARE"



HERE'S what Mrs. J. F. Ham says of the General Electric Refrigerator in her farm home near Poughkeepsie, N. Y.

"We have had our G-E Refrigerator four years with never a care. The way it saves food is wonderful—and it also saves me many steps."

The G-E is the standard of refrigeration excellence. In homes everywhere, one out of three having modern refrigeration today, has a G-E Monitor Top. All the mechanism is entirely sealed in steel—requires no attention, not even oiling.

There is a General Electric size, model *and price* for every home, with terms as low as $7 down and $7 a month.

General Electric Company, Electric Refrigeration Department, Section CZ11, Hanna Bldg., Cleveland, Ohio

ONE OUT OF THREE IS A GENERAL ELECTRIC

GENERAL ELECTRIC

Lowest-Cost REFRIGERATION

ON THE AIR

Conducted by
JEROME J. HENRY

Their Dialect Comes from Real Life

DIALECT over the aid is more than a matter of pronunciation. Local expressions and local meanings of words are equally important and require a greater familiarity with the actual speech of the part of the country in which the dialect is heard, according to the Stebbins Boys of Bucksport Point in Maine.

Niceties of dialect are a matter of first importance to the Stebbins Boys as portrayed by Arthur Allen and Parker Fennelly, who are more than capable actors—they have first-hand knowledge of the peculiarities of speech in the Bucksport region of New England where the scenes of their nightly radio sketches are laid.

They are careful to dismiss phrases which are often erroneously used on the stage to portray rural characters, so they've no use for "By cracky" and "By heck." They do, however, develop sayings of their own which are still true to the spirit of the region, such as, for instance, John Stebbins' recurrent "Jes so, Jes so."

• • •

Paid to Be a Clock Watcher

HALF of Bill Kephart's business as an announcer at the NBC

Atmosphere and background for a radio play was achieved with the aid of the new lapel microphone when a cast of actors presented a sketch over the CBS network from various rooms in a New York Hotel. Each of the actors wore a lapel microphone enabling them to move freely about the hotel as they read their lines from the script

studios is watching the clock. He gets up to the tune of an alarm, eats and rides a train with an eye glued to the timepiece, then when he gets to the studios, his time watching intensifies because broadcasts are run on split second schedules. On his vacation he deserted every timepiece and never saw a clock in two weeks. The only reminder of time was a calendar.

• • •

A Voice from Old Village Choir

THE rise of Harriet Cruise from a voice in the old village choir to stardom in CBS programs has confirmed the judgment of the church bell ringer in Hubbell, Nebraska. He used to desert his important stance in the vestibule to hear Miss Harriet entertain the folks at ice cream socials.

She was then four years old, the pride of aunts and uncles, and easily spurred to vocal performances with each "extra helping" from the vanilla and strawberry freezers. Not a public event in the county was complete without a solo from Harriet Cruise for a number of years.

Her next turning point came when Hubbell's well wishers saw her entrain at the town depot for the University of Nebraska at Lincoln. They were rewarded when they saw stories in the papers written about her roles in collegiate productions.

While still a co-ed, the young singer was booked on a summer concert tour throughout the East. Her performances during the tour came to the attention of radio program directors who engaged her to appear before the microphone.

• • •

Transmit Sight and Sound on Same Wave Length

TRANSMISSION of sight and sound from the same transmitter is the newest engineering feat to be exhibited by the Columbia Broadcasting System. Use of the new method will coincide with the first anniversary of the network's entrance into the field of television.

Transmitting a television picture and voice simultaneously has long been a field of study for research engineers. Although technicians have achieved this goal in the laboratories, it is believed that Columbia's station W2XAB will be the first to use the method regularly.

• • •

Enough Power to Lift a "Mountain"

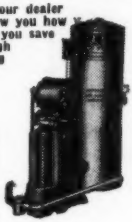
ENOUGH power is sent into the air in a day by a network of radio stations to life the world's tallest building 65 feet off the ground.

There are 86 stations in the NBC network, whose engineers arrived at this rather amazing result. The stations have a combined energy of 824,600 watts. Each watt

(*Continued on page 32*)

NEW LOW PRICES!

Ask your dealer to show you how much you save through buying now



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Take Off Your Hat to MYERS

Questions and Answers

Conducted by H. J. GALLAGHER
Agricultural Engineering Dept.
Michigan State College

Question: *My milking machine motor, ½ H. P., after two years of satisfactory operation, has begun to start slow with considerable sparking. Wherein would you say that the difficulty lies?*

Answer: To locate the trouble as indicated by your letter, assuming that your motor is of the repulsion-induction type, I would first check to see that there were no loose wiring connections to the motor. Then see if the carbon brushes are in proper place on the commutator. The carbon brushes are supported on a metal ring on the end of the motor opposite the pulley. This ring may be moved in either direction if not firmly fastened to the motor frame. On the ring there will be an identification mark which corresponds with a similar mark on the motor frame. These two marks should be in line. If they are out of line there will be excessive sparking when the motor starts.

If this is not the trouble take the end plate off the motor and examine the carbon brushes. If the brushes are worn too short to contact the commutator they should be replaced, or they may be sticking in their guides, in which case they should be removed and cleaned so that they will travel free. With a cloth, wipe any accumulation of grease or dirt from the commutator that may interfere with a good contact between the brushes and commutator bars during the starting period.

While the motor is apart use a bellows to clean the field and armature windings. Examine both windings to see if the insulation has been injured. Oil both bearings. When replacing the end plate tighten the tie rods uniformly so as not to bind the shaft in the bearings. If the motor passes this inspection it should start with its original snap.

If trouble is still apparent a qualified electrician should inspect the motor and check on size of the service wires to the motor, the voltage of the system and whether the armature or field windings are grounded.

• • •

Question: *I have a four-horse International gas engine that I use to pump natural gas with, which I have equipped with jump spark coil and spark plug, using six-volt storage battery to supply current. I would like to know if I could use a doorbell transformer to supply current instead of battery. I can get one 6-12-18 volt transformer or 10 volt only. We use electricity from a high line which furnishes us 110 volt 60 cycle A-C current.*

My engine runs at about 150 revolutions per minute and is on contact about 2/5 of a revolution.

Elmer E. Martin,
Hopedale, Illinois.

Answer: A heavy duty six-volt transformer of 40-60 watt capacity in combination with a jump spark coil may be satisfactorily used as an ignition system for a gas engine. The ordinary doorbell transformer does not have sufficient capacity for this type of operation; it would overheat and burn out.

Transformers larger than six volts are not recommended on jump spark coils, because with a higher voltage the vibrator points are more rapidly burned out.

If the ignition system was of the make and break type, a heavy duty thirty-volt transformer in combination with a coil would be

needed to give a satisfactory spark.

Using alternating current through a transformer and coil to start a gas engine is seldom done, because where electric service is available, the electric motor usually replaces the gas engine.

Home-Made Weather

(*Continued from page 23*)

green copper that should be used for flowers. The other is lower and broader. It has a perforated cover like an incense burner and drop handles with ivory balls on the ends.

These humidifiers need very little care. You plug them into a convenient outlet, fill them with water, and turn a switch. That puts them in operation. The ones that wash the air as well as humidify it need to be rinsed out now and then to free them of the dirt they wash out of the air. The motors need a drop or two of oil at long intervals. That is all.

The cost of watering the air is small as you can judge for yourself. The heating element in the humidifier that looks like an incense burner, for instance, takes 200 watts. You can run it five hours for one kilowatt hour of current. The motor driven humidifiers take from 40 to 60 watts. Running them uses about the same amount of electricity that you use in one of your lamps.

You will not expect, of course, that these smaller humidifiers will do for you what a complete weather making system will do, but with home-made weather, an occasional shower is certainly better than a constant drought.

• • •

Fruit Cakes in Glass

A friend of mine wrote me the other day that she was baking her Christmas fruit cake in covered glass dishes. She says that it is the easiest way she ever tried to bake fruit cakes evenly, because the cover keeps the moisture in, and top, bottom and sides bake all alike.

"I don't have to use any wax paper to line these baking dishes," she explained. "I just grease them well. I leave the cover on until the cake is cool. Then of course, I open it up to gloat a little, but not for long, because I want to seal the cover down with paraffin until we are ready to use the cake."

If you do your Christmas planning early, you will doubtless find someone on the list who would be vastly pleased with a loaf of rich plummy fruit cake arriving in a convenient glass dish done up, to be sure, in regular Christmas present style, with fancy paper or cellophane and big red bows.

I would beam at finding a few in my stocking, I can tell you. I would like, I think, a long flat fruit cake, and a round tall one, I guess. Then when we had eaten up the present we would have a perfect refrigerator dish, and a nice chunky bean jar.

Cooking used to be a family or

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at most a neighborhood affair. Of course certain dishes push the borders of the neighborhood wider and wider to the edges of the nation itself, but until magazines and newspapers went culinary in a big way, cook books were never best sellers, and recipes stayed pretty close to home.

Today they are worked out in laboratories, measured, and weighed and tested in the kitchens that business builds to further its own concerns.

This fruit cake recipe was sent to me by Miss Lucy Maltby, the Home Economics advisor of a big manufacturing firm. Whether she originated in her kitchen or merely perfected it there, she did not say, but we may be sure it was thoroughly tested before it passed her doors.

2 lbs. raisins — 1 lb. currants
½ lb. citron — ½ lb. dates
¼ lb. candied orange peel
¼ lb. candied cherries
½ lb. sugar
½ lb. blanched almonds
½ lb. figs — ½ lb. flour
½ lb. butter
6 eggs well beaten
1 cup sour milk
½ cup cooking wine
1 cup currant jelly — 1½ tsp. salt
2 tsp. nutmeg — 2 tsp. cinnamon
1 tsp. allspice — ¼ tsp. cloves
1 tsp. baking powder — ¾ tsp. soda

Method of Preparing and Mixing Ingredients

1. Chop fruit and nuts; dredge with ½ cup of the flour.

2. Cream together butter and sugar until light. Add well beaten eggs, sour milk, cooking wine, and jelly. Mix thoroughly.
3. Sift together; remainder of flour, salt, spices, soda, and baking powder.
4. Add flour mixture through a sifter to the egg mixture. Beat until smooth.
5. Stir in dredged fruit and nuts.
6. Pour into three well greased glass dishes; put covers on dishes.
7. Bake in a 275 degree oven for 2½ hours.
8. Remove from oven; cool without removing covers.
9. If desired, seal edges, where cover joins dish, with paraffin.
10. Set aside to ripen for three weeks or longer.

Promising

Her Father: "So you are in the Navy. What are your prospects of promotion?"

Plebe: "The best in the whole Navy, sir. My job is the lowest one we've got."

In the Pocket

"Yiu must have a wonderful memory to keep all that knowledge in you. head," praised Grey.

"Yes," said Bray, "I never forget anything when it is once in my head."

Grey smiled artfully, and said: "Well, old man, how about that $25 I lent you some time back?"

"Of course, that's different," came from Bray. "I put that in my pocket."

An Easier Life

A big truck, loaded with farm produce was parked in front of a State institution for the insane. The farmer asked one of the patients standing by to help him unload and deliver.

The patient worked silently for a while and then asked:

"You're a farmer, ain't yuh?"

The countryman admitted that he was.

"I used to be a farmer, once," confessed the patient, wistfully.

"Is that so?" asked the farmer.

"Yep, I've done a lot of farming in my time. But say, did you ever try being crazy?"

The startled farmer replied that he never had.

"Well," said his helper cheerfully, "you just ought to try it. It beats farmin' all holler."

Clipping Dairy Cows a Modern Essential

IN the growth of cow clipping one may discover a story of progress as interesting as that of electricity itself.

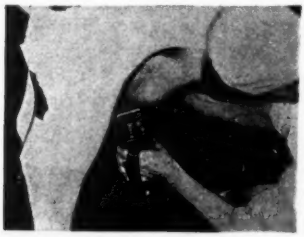
Introduced for its great convenience, electricity has developed to a point where its use on the farm is now justified on the basis of cost and profits.

A typical experience was given in Schaenzer and Bell's story in September "Electricity on the Farm," where Mr. Fred Rakow was quoted as saying: "All the members of our family are able to accomplish more with the help of electricity. The milking machine and good lights in the barn reduce the time of doing chores and so give us more leisure."

Advantage of Clipping

The practice of clipping cows started among the producers of certified milk. Research proved that clean milk could not be produced without having the teats, flanks and underline of the cow absolutely free from manure and other foreign matter from the stables. Also it was found that by keeping the hair short, less stable litter adhered, and the parts could be cleansed before milking in a small fraction of the time otherwise required.

After the producers of certified milk made clipping a standard practice, many cities adopted codes, some of which specify clipping and others which require a degree of cleanliness that really requires clipping unless precautions far more time-taking and costly are taken at each milking for keeping the herd clean and cleansing the parts.



Clipping is now practiced by many progressive dairymen as a means of producing a better grade of milk.

A great impetus has been given to clipping in the past several years, by the introduction of electrically-operated models with motor case in the handle, and costing only a few dollars more than the hand-operated clipping machines of the past. A self-contained clipper with the motor and clipper, all contained in the handle, makes clipping an easy job for one person, greatly speeds the clipping operation, and does neater, cleaner work.

Low Operating Cost—Has Ample Power

The cost of operation, too, is slight, as the clipper consumes as low as 40 watts, yet has power considerably in excess of clipping requirements. There is no clipping head on the new type of clipper,

Ends the Drudgery of Daily HOUSEWORK

There is a Roper Water System for every purse and purpose.

Complete, as low as **$47.00** *Write for literature.*

ROPER

GEO. D. ROPER CORP.
430 Blackhawk Ave. Rockford, Ill.

as this has been replaced with a very simple, efficient arrangement of two clipping plates and a tension device. The motor operates on any 110-112 volt current, both direct and alternating. When so specified, it can be supplied with special motors.

The work of keeping cows clean is so simplified by the modern electric clipper that many thousands of farmers not absolutely required to clip are using this up-to-date practice because they have found it time and money saving.

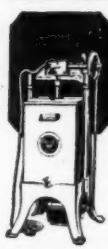
It is also a profitable practice to clip a strip of hair several inches in width along the backbone of both steers and dairy cows from tail to poll. It gives a cleaner, smoother appearance, also makes it easier to see or feel grubs, which cause discomfort, retard fattening or milk yield and impair the value of the hides as leather. Lice are also more readily eradicated, as are forms of eczema and mange which affect the skin of adult cattle along the backbone.

On the Air

(*Continued from page 27*)

equals 1/746 horsepower. One horsepower will lift 33,000 pounds one foot in one minute. The Empire State building weighs 302,500 tons. The stations are on the air an average of 16 hours each day.

This total power of the stations in the network is being increased.



NEW WAY TO CHURN

Thousands are changing to this simple, convenient, modern way to churn. It's the famous DAZEY principle adapted to electrical operation. Ends the drudgery. Just turn the switch. Made in 2, 4, 6 and 10 gallon sizes. Write today for catalog and further information.

DAZEY CHURN AND MFG. CO., Dept. 27
Warne and Carter Avenues, ST. LOUIS, MO.

It isn't very often that a cartoonist has the opportunity to meet his own figures, and Hershfield seems to be taking this opportunity to caution "Meyer the Buyer" to behave. Meyer's troubles, as written by Hershfield, and enacted by Ted Bergman, are broadcast over the Columbia system.

Eight of the stations have been authorized by the Federal Radio Commission to raise their power to 50,000 watts and two to 25,000.

Among the stations which have been authorized to increase their power to the maximum allowance of 50 kilowatts are: WSM, Nashville; WSB, Atlanta; WOC-WHO, Des Moines; KPO, San Francisco; KOA, Denver; and KSL, Salt Lake City.

• • •

Radio Comedian Goes Serious

YOU can trust Ray Knight, radio's cut up man, to do something different. The founder and proprietor of station K-U-K-U is offering his listeners a serious program now. In the role of Billy Bachelor, he is the lovable editor of a weekly newspaper. The program is being heard at 6:15, Eastern Standard time, every day except Friday and Saturday through an NBC-WEAF network.

The programs are built to represent a living picture of a real

community in the America of 1932. Against the background of this progressive town, Knight is presenting the story of Billy Bachelor and his family.

• • •

Public Speakers, Grange Convention on Radio

FARM boys and farmers interested in organized agriculture will be favored with two programs of nation-wide interest this month. On Tuesday, November 15, the National Farm and Home Hour will be taken to Kansas City where, direct from the speaker's platform the four winning talks in the National Future Farmers of America public speaking contest, will be put on the air. Each year this contest captures the interest of rural boys who are studying vocational agriculture in the high schools.

Down to Winston-Salem, North Carolina, the microphone will be taken on Saturday, November 19, to bring to farm folks an account of the National Grange Convention which will be in session at that time. The program may be heard at 12.30 p. m., Eastern time.

• • •

Fiorito Comes Out of the West

THAT youthful songwriter and band leader, Ted Fiorito, dates his career back to New Jersey school days when he acquired spending money by obliging with the "Missouri Waltz" on the piano at a dancing school.

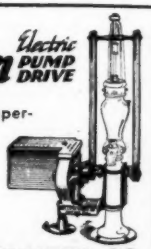
Little Jack Little—we all know him on the air—and many know him personally. In radio circles he's been with the popular station WLW in Cincinnati, with both networks, and right now may be heard over the Columbia network every day. His music and songs are followed by many listeners who like his individual style and personality which is carried along the air waves to our homes.

The beginning of his career was short-lived because Ted, who is now heard over a Columbia network from San Francisco, was compelled to buy a pair of long pants. The trousers didn't match his coat nor the tastes of his danc-

Cullman Electric PUMP DRIVE

Costs less to operate. Quickly installed.

Write for descriptive folder



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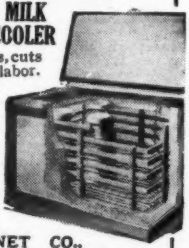
ESCO The Electric MILK COOLER

increases profits, cuts costs, saves labor. Cools milk quickly to below 50° and keeps it cold.



Send for Full Information

Ask also about ESCO Electric Sterilizers and Water Heaters.

ESCO CABINET CO.,
160 E. Market St., West Chester, Pa.

ing master. Perhaps that is the reason why Ted maintains a reputation for being one of the best dressed band leaders.

He was born in Newark, New Jersey, organized a small band during his high school days, started to write music, and played in small cafes and theatres.

Ted reads detective stories, and never reads newspapers; he does not drive an automobile or keep his check book in order, he studies all his fan mail and attempts to fulfill all the requests his mail contains; and he'll drop everything to play a joke on a friend.

Greenhouse Plants

(*Continued from page* 16)

hausts the air and thus creates an air circulation inside the greenhouse. He has not checked the humidity as accurately as Mr. Peck, but has noticed that the tomato vines were drier throughout the ventilated houses. The most striking result obtained by Mr. Dunbar, when using the fans, was in the equalization of temperature within the greenhouse.

The Dunbar-Hopkins plant extends east and west, and in cold, windy weather the temperature at the east end was often 5 degrees higher than the west end. Several tests run by Mr. Dunbar during extremely cold weather, showed that exhausting air by these small fans not only equalized the temperatures in the greenhouse within an hour, but also increased the over-all temperature two degrees without adding any more steam.

This equalization of temperature within such a short period of time is of great benefit in warding off loss by freezing, according to Mr. Dunbar.

It is the opinion of both Mr. Peck and Mr. Dunbar that air conditioning or forced ventilation will play a far more important part in the development and protection of the crops in the greenhouse industry in the next few years than it has in the past.

CLASSIFIED ADVERTISING

POULTRY RAISERS—RURAL SERVICE MEN. Write for free bulletin on ELECTRIC POULTRY Equipment, including Brooders, Incubators, Heating, Thermostatic supplies for home made equipment. Lyon equipment is proven under all climatic conditions. Investigate. LYON ELECTRIC COMPANY, 2075 Moore St., San Diego, Calif.

The PARAGON POULTRY TIME SWITCH is scientifically designed and approved by state universities. It provides automatic control both morning and night and DIMS THE LIGHT AT NIGHT to allow the hens to return to roost. Low price and UNCONDITIONALLY GUARANTEED. Write for full information today. PARAGON ELECTRIC COMPANY. Van Buren and Dearborn Sts., Chicago, Ill.

Milking Machines

A survey of 1,882 dairy farms in New Hampshire, Connecticut, New Jersey, and Pennsylvania showed that 35 per cent, or 532 farms, had milking machines, reports the United States Department of Agriculture. A survey in Grafton County, N. H., showed that only three-fourths as much labor was spent on a cow on a farm with a milking machine as on a farm where no milking machine was used. The farms with milking machines averaged 22.8 cows each, while those with no milking machine averaged only 14.8 cows.

Fool Feed

"What was that explosion on Si's farm?"

"He fed a chick some *Lay or Bust* feed, and it turned out to be a rooster."

Had Noticed the Loss

While wandering in a Florida swamp, a hunter saw an alligator snatch a small colored boy from the bank of a canal. Soon he came to a cabin with a number of pickaninnies in the yard. He addressed their mother saying, "I hate to tell you, but I just saw a 'gator get one of your children over on the canal." The old lady turned back in the door and said to her husband, "Rastus, Ah done tol' y'all sumpin wuz ketchin' our kids."

Front Cover Title Contest

Winners for September

1st Prize—$25.00

"Electricity makes a dog-gone lion show a profit."

R. C. Duffie,
P. O. Box 242, Bradenton, Fla.

The following have been awarded $5.00 cash prizes:

"An electric clipper can, by golly;
Make a trained lion of a coolie."

D. S. Gittings,
Upper Falls, Md.

•

"A fierce lion from Africa appears,
By the magic power of electric shears."

Mildred Hastings,
R. 1, Suffield, Conn.

•

"Shep accepts his fate with a grin,
For he enjoys this modern trim."

J. B. Peck,
R. 2, New Haven, Ind.

•

"A 'dog-gone' good way
To make the fair pay."

Mrs. Henry Du Bois,
Jupiter, Fla.

•

"Electric clippers aid Bud in tryin'
To turn Shep into an African lion."

Mrs. Ernest F. Nelson,
R. 1, Sherrard, Ill.

September Cover

Rules for November

There will be one first prize of $25.00 and five second prizes of $5.00 each. In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Titles should not be longer than 15 words—the shorter the better—and they need not be rhymes.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

Question "A" must be answered correctly.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 24 W. 40th St., New York, before December 1st.

Winning names and titles will be announced in the January issue.

Follow these simple rules. Your Editor cannot answer letters about the contest.

My title for the November Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

.....

(a) How many cows have you?.....

How many chickens?.....

My name is.....R. F. D.....

Post Office.....County.....State 11-32

Turn a Switch
instead of a crank

Use Fractional Horse-Power Electric Motors to Save Hand Labor

■ A quarter horse-power electric motor will operate your cream separator, pump jack, grindstone, milking machine, fanning mill, band saw, corn sheller and similar equipment—for only three cents or less an hour. All you need do is substitute a pulley for the crank.

Motors are low in cost and will give you years of service. In operation you can figure on four hours of work from one kilowatt hour of current. It is the cheapest labor you can hire and will save you many hours of hand labor every day in the year.

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